

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Space Studies Board

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Dear Colleague:

I am pleased to provide you with a prepublication copy of the report *Earth Science and Applications from Space: Urgent Needs and Opportunities to Serve the Nation*. This brief interim report of the NRC study titled “Earth Science and Applications from Space: A Community Assessment and Strategy for the Future” (the decadal survey) was prepared in response to discussions among agency sponsors, congressional staff and the committee. The report also responds, in part, to direction in the FY 2005 appropriations bill that calls for “the National Academy’s Space Studies Board to conduct a thorough review of the science that NASA is proposing to undertake under the space exploration initiative and to develop a strategy by which all of NASA’s science disciplines . . . can make adequate progress towards their established goals, as well as providing balanced scientific research in addition to support of the new initiative.”

The purpose of the interim report is to identify urgent, near-term issues that require attention prior to completion of the full decadal survey, including the following:

- Consequences of the cancellation, delay, or descope of important NASA Earth science missions,
- Capability of NPOESS to fulfill the objectives of some of the above missions,
- State of the technological base for future missions,
- Impact of delays in the selection and launch of Earth System Science Pathfinders,
- Vitality of the NASA Research and Analysis program, and
- Need for a strategy to obtain baseline climate observations and to develop climate data records.

Space-based observations have a central role in advancing programs to understand the Earth system and how it supports life; they also are critical to a broad range of programs of enormous societal benefit. Therefore, an overriding concern of the committee is the absence of a robust mission queue for the future Earth science missions that will build logically on the highly successful EOS missions. Knowledge anticipated from analysis of EOS long-term data records rests now on a precarious plan to use instruments on the nation’s next generation of weather satellites—NPOESS, scheduled for launch in 2009, and a new GOES series, scheduled for launch in 2012—foreign missions, and the occasional launch of small Explorer-class missions. In fact, aside from several delayed Explorer-class missions, the Ocean Surface Topography Mission (a follow-on to the current Jason-1 mission), and the Global Precipitation Measurement mission, the NASA program for the future has *no* explicit set of Earth observation mission plans. The enclosed report discusses these issues in more detail and recommends a course of action.

The committee is now turning its attention to the decadal survey, which is scheduled to be completed in late 2006. The committee’s final report will include a consensus of the top-level scientific questions that should drive Earth and environmental observations in the period 2005-2015; it will also present a prioritized list of recommended space programs, missions, and supporting activities to address these questions.

We would be pleased to arrange for a briefing by the co-chairs or other committee members. Please do not hesitate to contact me if you have any questions. I can be reached by telephone at (202) 334-3477 or by e-mail at acharo@nas.edu. Thank you.

Sincerely,

Arthur Charo
Study Director